

1.) A fluid filter assembly including a filter frame member and a flow-through filter medium disposed therein comprising: a border frame member and a flow-through pleated crest filter medium sized to be disposed therein, said border frame member having an inner perimeter defining a flow-through passage to receive and support said filter medium, said filter medium being in the form of spaced pleated crests to provide spaced opposed upstream and downstream pleated crest sets; and, at least one longitudinally extending support strip of selected firm support strength and preselectively controlled thickness and breadth to include spaced opposed side edges, said support strip extending adjacent at least one of said pleated crest sets of said filter medium in supporting relationship therewith, said support strip including a thin preselectively controlled thickness and breadth binding band of adhesive fastening material extending between said side edges of said support strip in primarily engaging and fastening relationship to said pleated crest of said pleated crest set.

2.) The fluid filter frame assembly of Claim 1, said border frame member being of disposable permanently stable material of U-shaped cross-section to fastenly receive opposed ends of said pleated crest filter medium, with said support strip extending transversely across said spaced pleated crest set.

3.) The fluid filter frame assembly of Claim 1, said support strip having a breadth in the range of zero point two (0.2) inch (") to one point five (1.5) inch (") and said binding band being in the range of zero point zero three (0.03) inch (") to zero point two (0.2) inch (").

4.) The fluid filter frame assembly of Claim 1, said border frame body member and said binding band being of cellulose and adhesive, respectively.

5.) The fluid filter frame assembly of Claim 1, said binding band being adhesive material.

6.) The fluid filter frame assembly of Claim 1, said border frame body member being of a selected cardboard.

7.) The fluid filter frame assembly of Claim 1, said support strip advantageously having a breadth of approximately zero point six two five (0.625) inch (") and said binding band advantageously having a breadth of zero point zero nine (0.09) inch (").

8.) The fluid filter frame assembly of Claim 1, said filter medium having fibers adjacent said upstream pleated crests substantially in alignment with the direction of fluid stream flow and substantially normal to said pleated crests which pleated crests are in the form of narrow, comparatively sharp linear fold lines.

9.) The fluid filter frame assembly of Claim 1, said filter medium having fibers treated with a selected odor and VOC removal chemical.

10.) The fluid filter frame assembly of Claim 9, said a selected odor and VOC removal being a silica-alumina.

11.) The fluid filter frame assembly of Claim 1, said filter medium material is dri-laid material.

12.) The fluid filter frame assembly of Claim 11, said filter medium material having a composition by weight of approximately sixty-five (65) percent (%) three (3) denier polyester fiber and approximately thirty-five (35) percent (%) six (6) denier polyester fiber with a polyvinyl acetate binder comprising approximately forty (40) percent (%) of the fiber weight.

13.) The fluid filter frame assembly of Claim 11, said filter medium material having a composition by weight of approximately fifty (50) percent (%) four (4) denier bi-component

fiber, approximately thirty-eight (38) percent (%) two point two five (2.25) denier polyester fiber and twelve (12) percent (%) fifteen (15) denier fiber.

14.) The fluid filter frame assembly of Claim 11, said filter medium material having a composition by weight of approximately sixty (60) percent (%) four (4) denier bi-component fiber, approximately twenty (20) percent (%) six (6) denier polyester fiber and twenty (20) percent (%) one (1) denier fiber.

15.) The fluid filter frame assembly of Claim 1, wherein said spaced pleats are each approximately three-fourth (3/4) inch (") normal depth with approximately fourteen (14) spaced pleat crests per lineal twelve (12) inches (").

16.) The fluid filter frame assembly of Claim 1, wherein said spaced pleats are each approximately three-fourth (3/4) inch (") normal depth with approximately twelve (12) spaced pleat crests per lineal twelve (12) inches (").

17.) The fluid filter frame assembly of Claim 1, said border frame member being of U-shaped cross-section with opposed ends of said pleated crest filter medium adhesively fixed therein.

18.) The fluid filter frame assembly of Claim 1, opposed spaced ends of said support strip being adhesively fastened to said border frame member.

19.) The fluid filter frame assembly of Claim 1, said support strip extending transversely to said pleated crests with said pleated crests including selectively spaced embossed valleys sized to snugly receive said support strip.

20.) The fluid filter frame assembly of Claim 19, said embossed valleys being aligned to receive said support strip in embossing engagement therewith.

21.) The fluid filter frame assembly of Claim 20, said embossed valleys being of a depth of approximately zero point zero five (0.05) inch ("") and a width of approximately zero point zero seven (0.07) inch ("").

22.) An air filter frame assembly comprising: a rectangular cardboard frame member formed from a selected pliable firm material to include spaced pairs of opposed frame member sides of U-shaped cross-section joined to provide an inner perimeter defining flow-through passage; a pleated crest fibrous polyester filter material sized to be disposed in said flow-through passage with opposed spaced ends thereof adhesively engaging in fastened relation in said U-shaped frame member sides, said pleated fibrous crest filter material being by weight approximately sixty-five (65) percent (%) three (3) denier polyester fiber and approximately thirty-five (35) percent (%) six (6) denier polyester fiber with a polyvinyl acetate binder comprising approximately forty (40) percent (%) of the fiber weight, being by weight of approximately fifty (50) percent (%) four (4) denier bi-component fiber, approximately thirty-eight (38) percent (%) two point two five (2.25) denier polyester fiber and twelve (12) percent (%) fifteen (15) denier fiber, and being by weight of approximately sixty (60) percent (%) four (4) denier bi-component fiber, approximately twenty (20) percent (%) six (6) denier polyester fiber and twenty (20) percent (%) one (1) denier fiber, said pleat crests of said pleated fibrous material providing sets of spaced upstream and downstream spaced pleated crest sets with the fibers of said fibrous material being aligned and extending approximately transversely normal to said spaced pleated crests and in alignment with the direction of fluid stream flow through said defined flow-through passage, said fibers being further treated with an acetic acid vinegar odor removal, said spaced pleated crest being of three fourth (3/4) inch ("") normal depth with approximately fourteen (14) and twelve (12) spaced pleats per twelve (12) inches (""); and at least

two spaced longitudinally extending pleated crest support strips of like material as said opposed border frame members, said support strips being of preselectively controlled thickness and breadth and extending transversely across at least one of said spaced pleated crest sets with opposed ends thereof fastened to said spaced opposed border frame members, each of said support strips including spaced opposed side edges and having a thin longitudinally extending binding band of adhesive fastening material of preselectively controlled thickness and breadth and shape extending intermediate thereof to primarily engage in fastening relation with the pleated crests of said pleated crest set, each of said support strips advantageously being of a breadth of approximately zero point six two five (0.625) inch (") and each longitudinally extending binding band advantageously having a breadth of zero point zero nine (0.09) inch (").

23.) In a method of forming a pleated crest fibrous fluid filter material assembly, the steps of feeding said fibrous material in pleated crest form from a prior pleating zone through a planar zone, said pleated crest fibrous material including spaced upstream and downstream longitudinally extending spaced pleated crest sets; feeding at least one longitudinally extending support strip into said planar zone with one face of said strip being tangentially adjacent at least one of said pleated crest sets, said support strip including longitudinally extending spaced opposed side edges of selected breadth and thickness with opposed longitudinal faces therebetween and, applying a thin longitudinally extending adhesive fastening band of preselected breadth and thickness to one of said faces of each support strip intermediate said strip side edges as said strip enters said planar zone to fasten said strip to said pleated crest set in supporting relation therewith to positionally maintain said pleated crest in pleated form in said planar zone.

24.) The method of Claim 23, wherein three support strips of selected breadth and thickness are fed into said planar zone transversely to and in spaced relation across said pleated crest set, each strip having an adhesive fastening band of selected breadth and thickness applied to said face adjacent said pleated crest set.

25.) The method of Claim 24, said band being applied to said strip-face along the central portion of said breadth of said support strip between said spaced opposed side edges thereof.